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Veterinary Education

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The objectives and trends in veterinary education

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ACCORDING to the 1930 census report which contains the most recent figures available, there were nearly 12,000 graduate veterinarians in the United States, 75 per cent of whom were engaged in private practice. In the same year a study in six representative states showed that 39 per cent of the time of the practitioner was taken up with cattle, 20 per cent with horses, 20 per cent with small animals, 16 per cent with swine, 3 per cent with poultry and 2 per cent with sheep. In the ten years that have elapsed it seems reasonable to believe that these statistics would have to be modified to some extent.

A study of our own graduates shows that slightly less than 50 per cent are in private practice, about 25 per cent are in Federal service, chiefly in meat inspection and quarantine work for the Bureau of Animal Industry and the other 25 per cent are scattered through a number of miscellaneous fields, such as teaching and research, army service, state and municipal regulatory work, farming and livestock raising. A few are practicing human medicine, but leaving out those who are deceased, only 3 per cent are engaged in activities not connected with their veterinary training.

This last statement is of special interest, since we may disregard the few who leave the profession in setting up our curricula. A few years ago, when the number of engineering graduates seemed to be greatly in excess of the need, much was said about the value of engineering training for a business career. We may assume that our graduates will cling to the profession, at least until there is a surplus.

From what we know of the distribution of the veterinarians of the United States and the present trends in the profession, we may say that fully half of the men leaving the schools will enter private practice. It is evident that the nature of practice is changing, particularly in the time devoted to the horse. This will probably continue to decrease and will be compensated by the increase in the attention given to cattle and the other food-producing animals. The most spectactular development has been in the field of pet animals. Whatever may be said of the economic value of such service to the general pub-

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lic, it must be admitted that this practice with its precision methods, its stress on neatness and cleanliness, and its *esprit de corps,* has done more than any other single factor to elevate the profession and place the veterinarian on a plane only slightly below that of the human practitioner. The appointments of the modern small-animal hospital are a joy to the observer and a challenge to the veterinary schools. They inspire the confidence of the public and closely approach the methods that have been so successful in the large human clinics. They do more than any other agency to fire the imagination of the youth and convince him of the high standard of the profession. Every other branch could, with benefit, learn something from them.

Federal Service

The Federal service is on the increase and while it may be encroaching to some extent on large-animal practice, because of its efficiency, the public will demand more and not less of its activities. Already the U. S. Department of Agriculture requires the services of more than 2,000 veterinarians and as such is the largest employer of such professional assistance in the world. The people will insist that their meat and milk come from animals that are not diseased, and the veterinarian is the only one fully qualified to determine that point. Nor must our livestock industry be ravaged by infectious diseases. In this respect the U. S. Bureau of Animal Industry has an unimpeachable record that is not even approached by any other government. Efforts of European governments, with all their vaunted knowledge, are, even in peace time, pathetic by comparison.

State Inspection

With the Federal government setting the pace, states and municipalities are slowly building up their own veterinary sanitary service. California meat inspection has been a model for some years. Recently, Washington has added materially to its livestock sanitary program. Too often these state and city services are ridden with politics, but in the future we may expect that they will continue to grow and that the people will require even greater efficiency. Many states are still woefully weak in their sanitary work.

The army just now is very much in the public eye and its need for veterinarians is acute. The experience in the world war convinced the army authorities that the veterinarian was an absolute necessity and as a consequence he was placed in the same corps and on the same plane with the medical man and the dentist. It is because of this fact that the army is now draining other essential services of their trained personnel. It is not generally known that the army now has some 50,000 horses, all requiring expert service, but even if it were completely mechanized, which seems very improbable in the light of the large use of horses in the armies of Europe, it would still need a large veterinary personnel for the proper inspection of its food.

Present Trends

With these facts in mind it is apparent what the trend of veterinary education should be. At least 50 per cent of the energy of the schools must be given to the training of practitioners with special attention to the food-producing animals. While the glamour and the economic returns in the small-animal field make that phase of the profession very attractive and have reacted commendably on the profession as a whole, we must not forget that they are still much in the minority. There is no longer any argument between the advocates of the theory and the practice of veterinary medicine. With the increased time allotted to the training, both must receive attention. There is fairly general agreement that two pre-veterinary years of general college work are not too much, and that the course itself should require two years of basic work and two of clinical training. In this latter respect the schools are still weak. Most institutions have an insufficient clinical staff and entirely too little clinic for the enrollment. We can still learn much from the medical colleges on clinical teaching. If this work were properly done, there would not be so much demand for an interne post graduate year.

This latter is impossible under our private hospital arrangement and ought to be made unnecessary by better clinical teaching in the upper years. In fact, the last two years should be given almost wholly to this service. Both hospital and ambulatory practice need to be greatly extended.

Clinical Variety

The variety of the clinic is another feature that requires attention. Thirty years ago there were too many horses in the clinics of the veterinary colleges, and now there are too many dogs. A right proportion is essential but seldom reached. It depends upon the ability of the clinical staff and the willingness of the institution to subsidize this service. This work should be so well done that any graduate would be able to step into an assistantship in any ordinary practice without embarrassment either to himself or to his employer. The very fact that this is seldom true indicates the imperative necessity for improvement. It should be unnecessary to say that the laboratory determinations of the basic years should be correlated with the hospital work and that an operating room that becomes a shambles is a disgrace to the profession.

Sanitary Service

Since such a large proportion of the graduates will go into Federal or state sanitary service, better training in meat and dairy inspection is much needed. While the Bureau of Animal Industry has trained our graduates for us in meat inspection procedures, the schools could profitably expand this preparation, especially where they are located near packing centers. The veterinarian is rapidly being replaced in the dairy inspection field, and unless the colleges materially increase their training in this line that work will all be done by graduates of technical dairy courses and sanitary engineers. Dairy plant management and manufacturing methods are almost a blank to the average veterinary graduate, and as a consequence he is practically helpless in the modern milk distributing and manufacturing systems. There is so much more to dairy inspection than the health of the cow that the profession must either increase its preparation or give up the field.

Research and Teaching

Research and teaching consitute a special field and should always require either experience in the field or an additional degree, or both. With the present demand for graduates it is almost impossible to get men to train for these fields. Dozens of fellowships are going unfilled this year.

In view of the great demand for veterinary education, as evidenced by the fact that all schools have more applicants than can be accommodated, some feel that the colleges should be increased in numbers and in enrollment. The Bemis Committee reporting in 1931 estimated that 500 graduates each year was the maximum likely to be required. We have now exceeded that number, but since the low point was 153 and there was a series of years when we had below 300 it would seem that further expansion should be urged with caution. We are now in an emergency. Following the world war there was for several years a surplus of veterinarians. There may be again when peace reigns. It is easy to become too optimistic. Now that California has started a school, and if it were possible to get the one in New England properly supported, that ought to be enough for a while. It is a very healthy sign for the profession when only the upper 50 per cent of the applicants need to be taken.

Relation to Agriculture

The relation of the profession to agriculture offers much food for thought. In Europe the veterinary schools seemed to be separate entities or units of a university. In this country they are, with one exception, associated with land-grant colleges. The impression left with the casual visitor in some of the continental countries, at least, was that the practitioners for the most part had an official status and did not have the warm support of their farmer clients, such as is so often true in this country. There was an aloofness that made the client call only because he was

(Concluded on page 54)

off the nostrils and holding the mouth shut at the same time.

A veterinarian with X-ray equipment will come to rely heavily upon it as a diagnostic aid. In large animals, especially in light horse practice, radiography is an invaluable aid in correct diagnosis of the numerous types of bone and joint pathology of the limbs. The small animal field, naturally, finds greater use for it. Fractures and dislocations with subsequent checks on reduction are conditions for which the X-ray is most generally used. X-ray examinations of the digestive tract for foreign bodies and for content of the lower bowel are helpful in making a correct diagnosis.

Before closing, a note of warning to users of X-radiation is added. Prolonged exposure to the primary tube radiation produces cellular damage in the operator or patient. Fluoroscopy often results in excessive exposure of the technician's hands. This may be manifested locally by an erythema, drying and exfoliation of the epidermis, soreness of the joints and tendons, or a pulsating sensation in the exposed part synchronized with the alternating current. More severe "burns" are seldom encountered in the veterinary field. Reflected radiation from powerful machines may do the same damage. Common sense dictates that the operator will expose the patient and himself to X-radiation no more than is absolutely necessary.

VITAMIN E *(Continued from page 29)*

Most of the work with vitamin E therapy in the larger domesticated animals has been reported by European investigators. They cite case reports in which animals, having a bad breeding history, have been restored to fertility.

The reports of Bay and Vogt-Moller (5) and Moussu (6) include large numbers of case reports, but it is difficult for the unbiased to draw conclusions from mere clinical observations when dealing with a function attended with as many variables as reproduction. Some investigators doubt if vitamin E is necessary at all in our large animal rations. Others say that due to its wide distribution in nature, its stability, and the low requirements of our animals, that practical livestock and poultry rations do not need to be supplemented with vitamin E. Such a procedure simply adds unnecessarily to the cost of rations.

It is not the purpose of this paper to discredit wheat germ oil. It is without doubt a concentrated natural source of vitamin E as well as the B complex and possibly other nutritional entities. We have simply tried to present true facts concerning the present day knowledge of vitamin E.

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EDUCATION *(Continued from page 10)*

compelled to. It seemed to me that while the European schools were much better supported financially than our own, our practitioners are kept more on their mettle than they are over there. If they do not deliver the service they are not employed. While no one has higher regard for the service by our Bureau of Animal Industry than I do, I would not want to see a time when our veterinary practice was on anything but a voluntary basis. State medicine may be just around the corner, but if it comes, much of the fine client-practitioner relationship will be lost. While our relation to agriculture is unique, and while both sides may have strained it at times, there is still much to be said for this cooperation. If we can serve the great livestock industry on the one hand and protect the health of the public generally on the other, our place in the American scheme will be assured and permanent.